

What is claimed is:

1. An improved gel-protected registered telephone jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to prevent corrosion of the connectors, the improvement comprising: a retainer to bind the insert to the housing and thereby limit fore-and-aft translational movement of the insert within the cavity.
2. A registered jack as claimed in claim 1 wherein the retainer is installed by a permanent fastening process.
3. A registered jack as claimed in claim 1 wherein the retainer is installed to the rear of the insert.
4. A registered jack as claimed in claim 1 wherein the retainer provides access to the rear end of the insert.
5. A registered jack as claimed in claim 1 wherein the registered jack is selected from the group consisting of RJ11; RJ11C; RJ11W; RJ14C; RJ14W; RJ25C; RJ31X; RJ38X; RJ45S; RJ48C; RJ48S; RJ48X; and RJ61X.
6. A registered jack as claimed in claim 1 wherein the retainer includes a bar having two ends extending across the rear opening and having two ends rigidly joined to the housing and a portion of the bar between the two ends rigidly joined to the insert.
7. A registered jack as claimed in claim 6 wherein the bar is surface mounted on the housing.
8. A registered jack as claimed in claim 1 wherein the bar is ultrasonically welded to the insert.

9. A registered jack as claimed in claim 1 wherein the retainer is ultrasonically welded to the insert and the housing.

10. A registered jack as claimed in claim 1 wherein the retainer includes two lugs, 5 installed opposing each other.

11. A registered jack as claimed in claim 10 wherein the lugs are ultrasonically welded to the housing.

10 12. An improved gel-protected registered telephone jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the 15 spring connectors to prevent corrosion of the connectors, the improvement comprising guides for the insert being mounted lower in the rear opening to the housing than in conventional registered jacks and the housing adjacent the rear opening extending rearwardly more than in conventional registered jacks, so that the positioned insert is lower and more rearwardly than in conventional registered jacks and 20 a retainer to bind the insert to the housing and thereby limit fore-and-aft translational movement of the insert within the cavity.

25 13. An improved gel-protected registered jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to prevent corrosion of the connectors, the improvement comprising 30 guides for the insert slanted more downwardly from the rear to the front of the housing so that the positioned insert slants downwardly more than in conventional registered jacks and a retainer to bind the insert to the housing and thereby limit fore-and-aft translational movement of the insert within the cavity.

14. An improved gel-protected registered jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to prevent corrosion of the connectors, the improvement wherein

5 the rear opening is wider in a lower portion thereof than on conventional jacks so that, with the rear facing upward, bubbles in gel applied in a liquid state can escape and a retainer binds the insert to the housing and thereby limits fore-and-aft

10 translational movement of the insert within the cavity.

15. An improved gel-protected registered jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to prevent corrosion of the connectors, the improvement wherein

15 the housing has grooves on opposite sides of the front opening extending from a lower front part of the front opening to an upper rear part of the front opening so that a temporary plate may be fitted in the grooves to serve as a dam so that, with the rear facing upward, gel 20 can be applied in a liquid state and not run out of the front opening and a retainer binds the insert to the housing and thereby limits fore-and-aft translational movement of the insert within the cavity.

25 16. An improved gel-protected registered jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to 30 prevent corrosion of the connectors, the improvement wherein

30 the insert is a body with a front and a top and the spring connectors extend out of the front and bend rearwardly, and the intersection of the front and top is a curved edge and a retainer binds the insert to the housing and thereby limits fore-and-aft translational movement of the insert within the cavity.

17. An improved gel-protected registered jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to prevent corrosion of the connectors, the improvement wherein

5 the housing has a plurality of flanges extending downward into the rear opening to serve as dividers for the spring connectors and the rear opening has spaces outward of the flanges to receive gel displaced when a plug is inserted and

10 a retainer binds the insert to the housing and thereby limits fore-and-aft translational movement of the insert within the cavity.

18. An improved gel-protected registered jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to prevent corrosion of the connectors, the improvement wherein

15 the gel has an outer surface and a protective compound on the outer surface to provide a slick surface so the plug can slide over the gel and

20 a retainer binds the insert to the housing and thereby limits fore-and-aft translational movement of the insert within the cavity.

25 19. An improved gel-protected registered jack of the type including a housing, a cavity in the housing, a rear opening in the housing communicating with the cavity to permit positioning of an insert that connects permanent telephone wires to spring connectors, a front opening in the housing communicating with the cavity to receive a plug so as to make contact between wires in the plug and the spring connectors with a gel on the spring connectors to prevent corrosion of the connectors, the improvement wherein

30 guides for the insert are lower in the rear opening to the housing than in conventional registered jacks and the housing adjacent the rear opening extends rearwardly more than in conventional registered jacks, so that the positioned insert is lower and more rearward than in conventional registered jacks so there is more room for gel displacement upon insertion of a

plug, the guides are slanted more downwardly from the rear to the front of the housing so that the positioned insert slants downwardly more than in conventional registered jacks to provide a more gradual impact of in received plug than in conventional registered jacks,

5 an opening in a bottom of the housing of a conventional registered jack for engagement by a prong of the insert is covered to prevent gel applied in a liquid state from running out,

the rear opening is wider in a lower portion thereof than on conventional jacks so that, with the rear facing upward, bubbles in gel applied in a liquid state can escape,

10 the rear opening is wider in an upper portion thereof than on conventional jacks so that, with the rear facing upward, gel can be applied in a liquid state proximate the connectors,

15 the housing has grooves on opposite sides of the front opening extending from a lower front part of the front opening to an upper rear part of the front opening so that a temporary plate may be fitted in the grooves to serve as a dam so that, with the rear facing upward, gel can be applied in a liquid state and not run out of the front opening,

20 the insert is a body with a front and a top and the spring connectors extend out of the front and bend rearwardly, and the intersection of the front and top is a curved edge to prevent the gel from being cut, as occurs with conventional gel-protected registered jacks,

25 a retainer binds the insert to the housing and thereby limits fore-and-aft translational movement of the insert within the cavity,

the housing has a plurality of flanges extending downward into the rear opening to serve as dividers for the spring connectors and the rear opening has spaces outward of the flanges to receive gel displaced when a plug is inserted, and

25 the gel has an outer surface and a protective compound on the outer surface to provide a slick surface so plug can slide over the gel.

20. A method of making an improved gel-protected registered jack comprising, molding a housing with a cavity in the housing, a rear opening in the housing communicating with the cavity, and a front opening in the housing communicating with the cavity,

30 positioning an insert that connects telephone wires to spring connectors in the cavity through the rear opening,

permanently installing a retainer to limit fore-and-aft translational movement of the insert subsequent to positioning the insert,

temporarily closing the front opening,
inserting a liquid sealant into the rear opening to cover the spring connectors on the
insert, and
permitting the liquid sealant to cure to become a gel, and remove the temporary
5 closure from the front opening.

21. A method as claimed in claim 17 wherein the retainer is installed by a
fastening process.

10 22. A method as claimed in claim 18 wherein fastening is selected from a group
consisting of ultrasonic welding, forming, bonding, and gluing.

15 23. A method of making an improved gel-protected registered jack comprising,
molding a housing with a cavity in the housing, a rear opening in the housing communicating
with the cavity, and a front opening in the housing communicating with the cavity,
positioning an insert that connects telephone wires to spring connectors in the cavity
through the rear opening,
permanently installing a retainer by a fastening process selected from the group
consisting of ultrasonic welding, forming, bonding, and gluing to limit fore-and-aft
20 translational movement of the insert after positioning the insert,
inserting a liquid sealant into the rear opening to cover the spring connectors on the
insert, and
permitting the liquid sealant to cure to become a gel.